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TRANSPORT DATABASE AND INFORMATION SYSTEMS DEVELOPMENT

Status report on the Trans-European North-South Motorway (TEM) Project Database

Transmitted by the secretariat

Note: The Working Party, at its fifty-fourth session, expressed interest in following progress made in the development of the database and information system in the transport sector (TRANS/WP.6/145, para. 33). With this in mind, the Project Central Office of the Trans-European North-South Motorway (TEM) Project has prepared a report which is reproduced below.

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TRANSPORT DATABASE AND INFORMATION SYSTEMS DEVELOPMENT

Status report on the Trans-European North-South Motorway (TEM) Project Database

A. SYSTEM DEVELOPMENT

1. The data collection and processing activities of the TEM Project started from its outset in 1977. For many years, it has been limited to basic data on the status of the TEM motorway network and the TEM Corridor, consisting of existing road links to be replaced by the TEM motorways in the future.

2. In the framework of the expanded Project activities in mid-eighties, the need arose to collect additional data on principal geometric parameters of these links and, therefore, two databases (TEMSTAT 1 and TEMSTAT 2) were established. TEMSTAT 1 reflects the status of the existing and future TEM motorway network, while TEMSTAT 2 presents the status of the national road system, fulfilling the function of missing connections as well as of the remaining E-road (AGR) and TINA links.

3. In these databases, the following data are being stored at the TEM Project Central Office (PCO) in Warsaw:

   - motorway/road number (international/national)
   - lengths of sections (in operation, under construction, planned)
   - number of carriageways/lanes
   - lane and shoulder widths
   - maximum longitudinal gradient
   - lengths within built-up areas
   - lengths of road having design speed less than 60 km/h
   - lengths of missing climbing lanes
   - lengths of bridges with bearing capacity less than 60 T
   - number of at-level railway crossings
   - number of underpasses with clearance less than 4.5 m
   - estimated travel times (cars, trucks)
   - traffic volumes (AADT) according to the last census.

   The data collection and processing is based on the uniform reference system, consisting of sections, subsections and portions of subsections.

4. The examples of the TEMSTAT 1 and 2 data collection forms were attached to the report submitted to the fifty-second meeting of the Working Party held on 14-16 November 2001 (TRANS/WP.6/2001/11).

5. On the basis of the decision of the twenty-sixth session of the TEM Steering Committee (25-27 November 1996, Geneva), the extended TEMSTAT data collection commenced in 1997. Data thus obtained are being processed and analysed by the Project Central Office in Warsaw.

The twenty-eighth session of the Steering Committee (22-26 November 1997, Geneva) further decided that the TEMSTAT forms, together with the reference system, would be revised and updated annually and that a special co-ordination meeting of experts responsible for data supply would be convened every year.

6. In accordance with this decision, the TEMSTAT Coordination and Training meetings were held in Istanbul, Turkey (25-27 March 1998), in Prague, Czech Republic (30 March-1 April 1998), in Vilnius, Lithuania (7-9 April 1999), in Budapest, Hungary on 17-19 April 2000, on 18-20 April 2001, on 8-9 April 2002 and on 19-21 May 2003 and in Prague on 18-19 March 2004.

7. At these meetings, the problems related to the TEMSTAT data collection and processing, to the reference system and mapping are being discussed and clarified on a country-by-country basis.

8. As from 1999, data on the status of the network as of 1 January each year are communicated to the TEM PCO by contact persons from the 13 participating countries electronically. This information is also used to describe the annual status of the TEM network (see Annex 1).

9. As regards the TEMSTAT maps, the TEM PCO is in position to produce these basic types of maps in the ArcView format:

   - maps showing the present status of the TEM corridor and main (AGR, TINA) road network in the TEM region
   - maps showing the existing (in operation) and future (under construction, in design stage, planned) motorway network in the chosen time horizons
   - maps showing the present or forecasted traffic flows in the chosen time horizons.

   All these maps cover either the whole TEM region, separate member countries or selected areas (e.g. vicinity of a big city or industrial agglomeration).

10. As from the year 2000 annually, on the basis of the data transferred by the member countries, the separate TEMSTAT road/motorway infrastructure maps of all TEM member countries mostly on the scale 1:750000 are launched by the TEM PCO and made available to the member countries in hard and electronic copies. By integration of individual TEMSTAT country maps, the map of the whole TEM region is also being produced.

11. Furthermore, as from the end of 2002, the TEMSTAT data transferred electronically by the member countries and processed by the TEM PCO are being interactively linked to the TEM mapping system, making it possible to introduce the reported annual infrastructure changes to the respective maps automatically and thus having transformed the TEMSTAT mapping system to the full-fledged GIS one.

12. Within the framework of the co-operation of the TEM PCO with the WERD (Western European Road Directors), transformed in 2003 to CEDR (Conference of European Directors of Roads), its representatives participate regularly in the abovementioned annual TEMSTAT

meetings with the aim of harmonizing road and motorway data collection and processing procedures, reference and mapping systems of the newly acceded Central European countries with those of the European Union.

13. Furthermore, in accordance with the TEM Programme of Work for the years 2001-2004, constituting an integral part of the TEM Co-operation Trust Fund Agreement, the elaboration of the TEM Master Plan commenced in September 2003. This activity was also included in the Short-term Strategy for Further Integration of TEM in New European Transport Environment, approved by the 36th session of the Steering Committee held at Geneva on 4-6 December 2001, representing one of its most important outcomes.

14. At its 39th session which took place at Geneva, Switzerland on 26-28 May 2003, the Steering Committee approved the revised Terms of Reference, elaborated by the UNECE Transport Division and decided that the Master Plan had to be finished in September 2004. The Committee also gave a mandate to the Master Plan Coordination Group (Director and/or Regional Adviser of the UNECE Transport Division, TEM Project Manager and his Deputy, External Consultants) to start the work as soon as possible and to apply a flexible approach, reflecting the real situations encountered, understanding that the Committee will be kept informed about the decisions taken and progress reached.

15. The elaboration of the TEM Master Plan resulted in the need of additional data collection necessary for priority projects' identification and evaluation in line with the approved evaluation methodology, elaborated by the external consultants.

16. For this purpose, the attached templates (Annexes 2-6) were sent to the TEM participating countries as well as to 8 other interested Eastern and South-Eastern European countries to be returned filled in by the end of April 2004.

Annexes: 6

Annex 1

UNECE TEM Project Central Office

Warsaw, Poland

STATUS OF TEM NETWORK (as of 1.01.2003)

COUNTRY	Total length	PROGRAMMED (in study, preliminary design and design phases)		UNDER CONSTRUCTION		IN OPERATION		COMPARATIVE INDICATORS		
	km	one carriageway	Both carriageways	one carriageway	both carriageways	one carriageway	both carriageways	% of total TEM length	CONSTRUCTION PROGRESS (% of length under construction)	DEGREE OF COMPLETION (% of length in operation)
Column No.	1	2	3	4	5	6	7	8	9	10
AUSTRIA	485	35	36	-	-	35	414	2.1	-	89.0
BOSNIA and HERZEGOVINA	792	-	792	-	-	-	-	3.3	-	-
BULGARIA	925	-	617	-	15	19	274	3.9	1.6	30.7
CROATIA	1465	311	564	36	257	101	420	6.2	18.8	32.1
CZECH REPUBLIC	972	8	405	8	32	-	527	4.1	3.7	54.2
GEORGIA	1053	-	1045	-	-	-	8	4.4	-	0.8
HUNGARY	1624	40	1037	-	-	40	547	6.9	-	34.9
ITALY	1519	-	4	-	-	-	1515	6.4	-	99.7
LITHUANIA	733	205	11	10	-	266	456	3.1	0.7	80.3
POLAND	3297	425	2247	9	152	86	464	13.9	4.7	15.4
ROMANIA	2983	-	2735	-	134	-	114	12.6	4.5	3.8
SLOVAKIA	936	-	487	23	77	588	348	3.9	9.5	68.6
TURKEY	6921	-	378	-	321	4227	1995	29.2	4.6	59.4
TOTAL	**23705**	**1024**	**10358**	**86**	**988**	**5362**	**7082**	**100.00**	**4.3**	**41.2**

Annex 2

UNECE TEM and TER Master Plans

TEMPLATE 1 – Identified Projects

Project ID*	Road and related infrastructure	Project Name	Project cost (€ MIO)	Overall Budget (€ MIO)
	Sections	*e.g. Rehabilitation of: Ankara by-pass*	*Please indicate the currency*	*per year of the years covered by the national plans*

Note: Each country is expected to fill a template

Annex 3

TEMPLATE 2A – Road and related infrastructure Project Fiche

Project Name:					
Nature of Project:	? Rehabilitation	? Upgrade	? Other		
Location:	*(Geographical Description including main cities, ports, etc and preferably a map)*				
Status of Project:	? Study	? Tendering	? Planning		
	? Identification	**?** Design	? Under Construction		
Project Objectives: *					
Project Description: *Describe the new project, as it differs from the existing situation (Technical Characteristics of existing situation will be provided in section V of the template, and the new project characteristics in section VI of the template)*					
I. Current average annual daily traffic (AADT)**					
a) All vehicles					
b) International traffic					
b1) trucks b2) buses / coaches b3) private vehicles					
c) Domestic traffic					
c1) trucks c2) buses / coaches c3) private vehicles					
II. Projected average annual daily traffic (AADT) (2010)**					
a) All vehicles					
b) International traffic					
b1) trucks b2) buses / coaches b3) private vehicles					
c) Domestic traffic					
c1) trucks c2) buses / coaches c3) private vehicles					
III. Travel costs for private vehicles/for passenger in a bus per km for the section considered (existing, and if project is implemented)***					
IV. Travel time for passengers and for freight for the section considered (existing, and if project is implemented)***					
V. Technical Design characteristics of the existing situation					
a) Part of an international agreement (as AGR)					

b) Type of road (highway, controlled access motorway, open access motorway, etc;) c) No of lanes d) Length (in km) e) Type of special structures (length of tunnels, length of bridges, etc) f) Existence of tolls / toll fare	
VI. Technical Design characteristics of the project	
a) Part of an international agreement (as AGR) b) Type of road (highway, controlled access motorway, open access motorway, etc;) c) No. of lanes g) Length (in km) h) Type of special structures (length of tunnels, length of bridges, etc) i) Existence of tolls / toll fare	
a) Type of special infrastructure b) Location of special infrastructure c) Area (km2) for special infrastructure	

Estimated Investment Cost (€ or $, 2003 prices):	
IRR	*From the feasibility study or expected one*
Expected benefits:	
Existing Reports:	
Implementation Programme (years):	**Preparation: …… Expropriation: …… Construction: ….** **Total: ……**
Implementation Authority:	
Funding Sources: (Total number per source or in % of total budget per source)****	National funds:…….. Bank loan:…….. Grants (e.g. from EU, USA, Japan etc.):…….. Private sector:……

Note: Data characterized with

***** *are optional*

*** if not existent in official statistics, an estimate is sufficient. If no estimation, then relevant studies will be used as sources (i.e. TINA, TIRS etc.)*

**** estimation only*

***** if not available leave it blank*

Annex 4

TEMPLATE 2C Maritime/port Fiche[1]

Port Name:		
Location:	*(Geographical Description including main cities, ports, etc and preferably a map)*	
Port and intermodal connections description:		
Project Description: *Provide information if there are plans for the port infrastructure/installations investments*		
I.	**Current average annual traffic (AAT)****	
a)	Passengers (international, domestic)	
b)	Vehicles international (trucks, private cars)	
c)	Vehicles domestic (trucks, private cars)	
d)	General cargo in tons (international, domestic)	
e)	Containers (number of TEUs, tons)—domestic	
f)	Containers (number of TEUs, tons)—imports/exports	
g)	Containers (number of TEUs, tons)—transhipment	
II.	**Projected average annual traffic (AAT) (2010)****	
a)	Passengers (international, domestic)	
b)	Vehicles international (trucks, private cars)	
c)	Vehicles domestic (trucks, private cars)	
d)	General cargo in tons (international, domestic)	
e)	Containers (number of TEUs, tons)—domestic	
f)	Containers (number of TEUs, tons)—imports/exports	
g)	Containers (number of TEUs, tons)—transhipment	
III.	**Port annual throughput (in tons for general cargo, in TEUs for containers)**	
IV.	**Travel costs in ports (handling, port charges etc) *****	
a)	Per container	
b)	Per ton of general cargo	
c)	Per truck	
d)	Per ship (average)	
V.	**Handling/processing time in ports*****	
a)	Per container	
b)	Per ton of general cargo	
c)	Per truck	
VI.	**Travel costs in ports (handling, port charges etc) *****	

[1] TEMPLATE 2B is related to Rail and related infrastructure not relevant to TEM

a) Per container b) Per ton of general cargo c) Per truck d) Per ship average	
VII. Characteristics of port connections with the other ports in the TEM or TER countries	
a) Container ships: connections per month, cost of sea voyage, travel time of sea voyage, number of TEUs per year b) General cargo ships: connections per month, cost of sea voyage, travel time of sea voyage, number of tons per year c) RO/RO RO-RO/ferries: connections per month, cost of sea voyage, travel time of sea voyage, number of trucks and private vehicles per year	

Note: Data characterized with

***** *are optional*

** *if not existent in official statistics, an estimate is sufficient. If no estimate then relevant studies will be used as sources (i.e. TINA, TIRS, etc.)*

*** *estimation only*

Annex 5

TEMPLATE 3 Project Criteria Scores **(*each country complete the relevant column, if so wishes*)**

Criteria	Default Set of Scores by consultants*	Scores per Country - involved in the project **																			
		AT	BG	B-H	BL	CZ	CR	FYROM	GE	GR	HU	IT	LT	MD	PL	RO	RU	SK	SL	S-M	TU	UKR
C_A																						
C_{A1}																						
C_{A2}																						
C_{A3}																						
C_{A4}																						
C_{A5}																						
C_B																						
C_{B1}																						
C_{B2}																						
C_{B3}																						
C_{B4}																						
C_{B5}																						
C_C																						
C_{C1}																						
C_{C2}																						
C_{C3}																						
C_{C4}																						
C_{C5}																						

* Or provided by the Delphi team when necessary.

** In case country experts disagree with proposed scores, they may fill up the respective column of their country with their proposed scores, providing an adequate justification of the wanted change.

Annex 6

TEMPLATE 4 Project Criteria Weights (*each country complete the relevant column, if so wishes*)

Weights	Default Set of Weight by consultants*	Weights per Country - involved in the project **																			
		AT	BG	B-H	BL	CZ	CR	FYROM	GE	GR	HU	IT	LT	MD	PL	RO	RU	SK	SL	S-M	TU	UKR
W_A																						
W_{A1}	12%																					
W_{A2}	4%																					
W_{A3}	8%																					
W_{A4}	12%																					
W_{A5}	4%																					
W_B																						
W_{B1}	10%																					
W_{B2}	10%																					
W_{B3}	13%																					
W_{B4}	10%																					
W_{B5}	8%																					
W_W																						
W_{W1}	4%																					
W_{W2}	1%																					
W_{W3}	3%																					
W_{W4}	1%																					
W_{W5}	2%																					
SUM	***100%***																					

* **Provided by the Delphi team (See Annex II).**

** In case country experts disagree with proposed weights. They may fill up the respective column of their country with their proposed weights providing an adequate justification of the wanted change.

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